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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,275

04/05/2005

Yusuke Mitari

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EXAMINER

SAINT CYR, LEONARD

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,275	Applicant(s) MITARI ET AL.	
	Examiner LEONARD SAINT CYR	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3 - 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3 - 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04/05/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 3 - 18 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that neither Mori et al nor Matsugu teach an activation step of selectively activating at least one extraction module from among a plurality of extraction modules for extracting features of respective categories (Amendment, page 10 – 12).

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3-7, 9 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al.(US PAP 2002/0181765) in view of Matsugu (US PAP 2002/0181775), and further in view of Matsugu (EP 1164537).

Regarding claims 1, 13 and 14 Mori et al. discloses a pattern identification method of identifying a pattern of input data by hierarchically extracting features of the input data, comprising:

using a processor to perform (paragraph 11) the step:

a first feature extraction step of extracting a feature of a first layer (see para [0056]);

an analysis step of analyzing a distribution of a feature extraction result in the first feature extraction step (see para [0053]);and

a second feature extraction step of extracting a feature of a second layer (see para [0057]).

However, Mori et al., do not specifically teach calculating a respective likelihood of extracting a feature from one of a plurality of categories for features of a second layer higher than a first layer on a basis of an analyzed distribution of in the analysis step; an activation step of selectively activating at least one extraction module from among a plurality of extraction modules for extracting features of respective, whose calculated likelihood of the category for the feature to be extracted from the second layer is not less than a predetermined value; extracting a feature from the second layer by the selectively activated extraction module; and a storing step of storing the feature extracted from the second layer in a memory.

Matsugu (775) teaches **the feature detection layers are connected (interconnected)** so that the feature detection layers can receive the outputs from the cells, belonging to the same channels in the feature consolidation layer at the preceding stage. In a case **where the local area recognition module detects, in a local area, a high-order pattern with an output level higher than a predetermined threshold value, the local area recognition module outputs information of the category (detection probability or detection likelihood) and position information of an object detected in that local area** (paragraphs 53, and 68). **A memory 43 for storing**

Art Unit: 2626

data (e.g., template pattern data) representing a category of a high-order pattern (paragraph 62, lines six lines).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to interconnect feature detection layers as taught by Matsugu (775) in Mori et al., because that would help efficiently perform recognition using a small-scale circuit for detecting (recognizing) pattern a predetermined category (paragraph 13).

However, Mori et al., in view of Matsugu (775) do not specifically teach an activation step of selectively activating at least one extraction module from among a plurality of extraction modules for extracting features of respective categories.

Matsugu (537) discloses that **the channel activation control circuit (extraction module) or the gating circuit calculates a target channel activation degree or selects a channel from the time shared channel data. The features detection layers and the feature integration layers form a set of processing channels at a plurality of resolutions or scale levels as a whole.** Each processing channel implements processing at one scale level or resolution **to detect and recognize low- to high-order features** (paragraphs 182, 183, and 267, lines 1, and 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to selectively active a channel (extracting module) as taught by Matsugu (537) in Mori et al., in view of Matsugu (775), because that would dramatically improve an information processing capability for detecting patterns (paragraph 42).

Claim 14 further teaches a computer readable storage medium (“computer software...storage medium”; Matsugu (775), paragraphs 4, and 92).

Regarding claim 3, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the first or second feature extraction step, a feature obtained by performing a predetermined transformation to a predetermined feature is extracted (Mori et al; see para [0057]).

Regarding claim 4, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose a re-extraction step of re-extracting a feature of a lower layer on the basis of a feature extraction result of a higher layer in the second feature extraction step (Mori et al; see para [0056]- [0058]).

Regarding claim 5, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, a distribution of each of the plurality of feature extraction results is analyzed, and a relative relationship between analytical results is analyzed (Mori et al; see para [0053], [0061]).

Regarding claim 6, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, a distribution within a specific range of at least one of the feature extraction results is analyzed (Mori et al; see para [0053],

Art Unit: 2626

[0061]).

Regarding claim 7, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, whether the feature is extracted or not extracted within a predetermined range in a distribution of at least one of the feature extraction results is analyzed (Mori et al; see para [0053], [0061]).

Regarding claim 9, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, a size of a range within which the feature is extracted or not extracted in a distribution of at least one of the feature extraction results is analyzed (Mori et al; see para [0053], [0061]).

Regarding claim 10, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, a likelihood of at least one of the feature extraction results or a total of feature detection levels is analyzed (Mori et al; see para [0061]).

Regarding claim 11, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that the pattern identification is performed on the presence/absence of a face image contained in the input data (see para [0078] - [0079]).

Art Unit: 2626

Regarding claim 12, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that the pattern identification is performed on a position of a face image contained in the input data (Mori et al; see para [0079]).

Regarding claim 15, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that a second feature extraction step of extracting a feature of a second layer higher than the first layer by one on the basis of a feature extraction result in the first layer and a feature extraction result in a layer other than the first layer (Mori et al; see para [0056]- [0057]).

Regarding claim 16, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that the layer other than the first layer is a layer lower than the first layer (Mori et al; see para [0056] - [0057]).

Regarding claim 17, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that the layer other than the first layer is the second layer (Mori et al; see para [0056] - [0057]).

Regarding claim 18, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that an integrating step of integrating feature extraction results by a plurality of feature extractors in the same layer (Mori et al; see para [0053]).

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al.(US PAP 2002/0181765) in view of Matsugu (US PAP 2002/0181775), further in view of Badique (US Patent 5,570,434); and further in view of Matsugu (EP 1164537).

Regarding claim 8, Mori et al. in view of Matsugu (775), further in view of Matsugu (537) do not specifically teach a barycenter of a distribution of at least one of the feature extraction results is analyzed. However this feature is well known in the art as indicated by Badique. Badique discloses a face recognition method that analyzes the distribution of features (see col. 9, line 63 - col. 10, line 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a barycenter of a distribution of the features for the benefit of enabling the recognition of the mouth and eyes (see col. 2, lines 49- 51).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 2626

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD SAINT CYR whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800) 786- 9199 (IN USA OR CANADA) or (571) 272-1000.

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09/19/09

Application/Control Number: 10/530,275

Page 10

Art Unit: 2626

/Richemond Dorvil/

Supervisory Patent Examiner, Art Unit 2626